

đq

-1616 to -1394

Promoter region analyzed:

ID NO: 105) MSP primers

promoter, (SEQ

Cyclin D2

Accn. No. U47284

gtCGgtagtt agaggggtgg ccttaataac ac**CG**ggaggg gagctaactg gag**CG**agacc cccCGaaaac Gcccaccacc cagccttgac tcaaggatgC GttagagcaC Gtgtcagggc CGacCGtgct ggCGgacttc acCGcagtCG CGaggatgCG ggtggtgtt tgcaggggg<mark>CG</mark> aggaag<mark>CG</mark>gg ttttcctg<u>C GtggcCG</u>ctg gg<u>CG</u>ggggaa GtCGccccac cttcctctgc ccctccCGg gagcccccag aaacaCGatg gtttctgctC Gaggatcaca ttctatccct **CG**gggctttc agaaagctgc at**CG**gtgtgg cca<mark>CG</mark>ctcag CGcagacacc tCGggCGgct atctctgggt agggacctat ctggatctta caaagttgga gggt<u>CG</u>tatt gtetetecee tteeteetgg agtgaaatae aceaaaggge GCGgtgggggg tgggggggtga gagctCGagc caCGccatgc cCGctgcaCG tgccagcttg CGcagcacat cagggCGctg acacctacag aatgagtgaa attagagggc agaaatagga ggatggaggg ggagggagg Gagcagggga agagggagga qatCGtatct cctqtaaaga ctgctgttct ggctctgctC ctcacctctc gggagagggg gctcccaggg agaaagcctg gcagagtgag g<mark>CGCG</mark>aaac<u>C G</u>gagggt<mark>CG</mark>g ccctcccct CGagCGtgga ggcctcatgc ctcCGggggaa aggaaggggt agcCGgacct aatccctcac tCGcccctc GgcctgCGgC GgccctagaC GctgcacCGC tttcactta tctgaggtca ccccatcttc agataatcta ccctacattc cccacctctc cctccctctt tccctttaat catgaccttt gtCGggccag ggagggagag attgaaagga gaaagcagga gggccctgg catgcaggct cagagCGggg aggCGCGggg GcttcagagC GgagaagagC tgCGagtgag gcagcccCGa tctctctgcc ggaaCGctct cagaagggaC Gttgttctgg aggaacacag acttcaggga gctattttct aaaatcaccc cctcccttat ttgaagaagc ctccaccttc ttgaagttgg gaggtgaaga aaCGccacca ggaggtcagg aaaccetttt ccaggc<mark>CG</mark>gg aggatc**CG**tt cttcctaata ttgCGtcacC aaggaggag ggaggac<mark>CG</mark>g tgcctgtcCG gggacCGCGt gaggaggaac ctcccttctg gccaaaggaa ag**CG**aggggg ccctgcccc cagggggggg CGaagttatc acccccttc caggaggatt CGggaggaag ttggCGtgct cccagccagc ttttgtgggt gagagggaa gaggaaaggg agttttaagg caatcctCGc ccctattta aaaaacagaa ggggtggCGg gg**CG**aaggac tgtcagcaga gCCcaggggg gccatttcct cCGctgggag gggccc**CG**aa ccagagaagc acacactctg ggcdatcgag atg<u>CG</u>aggtt ttctaaattg gaaacagctt aatacaaggg 1441 1021 1081 1141 1201 1261 1321 1381 1501 181 241 301 421 841 481 541 661 901 961 361 601 721 781

FIG. 1A

APPLICANT(S): Sukumar et al.

TITLE: ABERRANTLY METHYLATED GENES AS
MARKERS OF BREAST MALIGNANCY

Application No.: 09771,1377 File Date: January 26, 2001

Docket No.: JHU1630

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MSP Unmethylated 223 GT TATGTTATGT TTGTTGTATG T AAAATCCACC AACACAATCA	B B		Re	Forwar verse	Forward UM 22 BP MT 56 Reverse UM 21 BP MT 56	(SEQ ID NO:21) (SEQ ID NO:22)
MSP METHYLATED 276 BP						
TAC GTGTTAGGGT CGATCG	F M 19 BP	въ	MT 58		(SEQ ID NO:23)	
CGA AATATCTACG CTAAACG	R	R M 20 BP	MT56	(SEQ	MT56 (SEQ ID NO:24)	

### =1G. 1B



Accn No. AC003986 (SEQ ID NO:106)

Promoter Region analyzed: nts -51145 TO -51750

Twist Promoter:

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gcaccttcCG aggCGtagtc ctttggatgt tggggagCGt cagactgggt CGttgtagag gggaaaggag cagccccCGC GgCGCccaC gtttggcctt tggaactcaa CGCGgttgac acttttcttg gcatgcccc cagcaatcca aatCGgcccc aCGgacctag gggaggaCGa attgttagac actgtgtaga agctgttgcc attgctgctg GacCGcttcc gaaatCGccc agg**cc**ggtgg ccaatgacac tgctgccccc aaactttccc cagacacctc ggactggaaa g<mark>CG</mark>gaaactt tcctataaaa tecestace etecesete cctcctgctc tggCGggctg CGctCGagag gagcaacagc GtccagcCGt caag**CG**gCGc ggg**CGtCG**ga ccagGcacc gagtc<mark>CG</mark>cag gccctCGgac tg**CG**ggctgt ggtttccttc cacCGaagag tgaacttctg cctctttCGa tggccaggac agtctcctcC CGcaCGctcC GgCGgggaag gaaggggag gg<mark>CG</mark>gctagg tgcagctctC Gcccaactcc ggaggcctgg CGggggtgtgC gccccccc Ggggggaagc tccCGtcCGt ccCGCGagge caCGCGtCGc GCGddddaCG aCGacagcct gagCGggtgg gcaagaagtc ნ**ეე**ნ**ეე**ნეენ tgCGggagCG tccccaCGct **5050050**0000 ag**CG**gcaagC **C**Gcaaatcct tgaatggttt **CG**gaggtccc **ნე**ნ**ნე**ეთენნნ atccacacCG t CGC CGGC CG GcagCGggtc atggccaaCG ggcaag<mark>cccc</mark> **G**gcagcagca CGCCGCGctg CGgaagatca caggc<mark>CG</mark>gga tgggtggctc ccacaccacc cccccagccc gacatcaccc tcCGgatggg gctgccacCG gggCGctgcc ctcCGggctg tecetectee teaceteagg cctccaagtc ctttttggga cct<u>CG</u>gggcc cagcacCGgc acCGtttcca GaCGgggagg CGccCGggcc agghCGttth CCgggggaggg ctCGccagtc gcagc**CGcCG** teccededed Gecetecede ენეენეენეე GggcCGcatC GccCGggcCG aggCGcccCG ctcttctcct ctgcccCGgg ccCGgcccag acctgaccat Gtetteagaa aCGccaggae gg**CG**agagag ggaggtggga ggtataagag ggCGagatga tagggttCGg **G**gaggaagg**C** atcatgcagg aCGtgtccag cagacCGgca a**CG**agg**CG**tt GcaCGgCGgg agc<mark>CG</mark>ggcag ნნ**ეეეენეე**ნ agctgcagaC cattggactg gggttCGtct aggggc<mark>CG</mark>gc ggcccagaag ccaccc**CGCG** ccCGaggaag cttCGaaaag cctgca**CG**ga agggctcttg tgggctgCGc ეანეაანენე gCGggctctg tggg<u>cc</u>cttt cctccc<mark>CG</mark>cc tctcctcCGC gg<mark>cGgCGaCG</mark> gaggaagagc aCGagcaggC cagtCGctga tcacagccad **92**6**92**6**92**66 tcttaCGagg 181 241 361 421 721 541 781 841 481 601 661 901 1021 961 1081 1141 1201 1261 1321 1441

**FIG. 2A** 



ID NO:107)

ID NO:108)

ID NO:109)

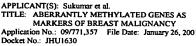
ID NO:110)

FIG. 2C

(SEQ ID NO:106 (Con't)

aagctgagca agattcagac cctcaagctg gCGgccaggt acatCGactt cctctaccag gtcCGCGtcc ggctca<mark>CG</mark>ag aaggac<mark>ccc</mark> gcagctatgt gCGaCGagct ggactccaag atggcaagct gcagctatgt aCGccttctC Ggtctggagg atggaggggg cctggtccat CGgagcccc cacccctca gcagggcCGg agacdtaggt gtcctccaga CGgctcagct cactaccagg 1621 1681

	(SEQ	ČES)		(SEQ	(SEQ
	FUM (3) 21 BP AT 58	RUM (3) 20 BP AT 60		(5) 20 BP AT 58	(4) 19 BP AT 58
	FU	RUM		FW	RM
Unmethylated 193 BP	tt TGgatggggt tgttatTGT	c ctaaccCAaa CAacCAacc	Methylated 200 BP	t ttCGgatggg gttgttatC	aaacGac ctaaccCGaa CG





AF157483 (SEQ ID NO:91)

ACCN NO.

Promoter region analyzed: nt -196 to nt

RAR beta promoter, MSP primers

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gggggaccag aattccccat g**CG**agctgtt tga<mark>ggactgg gatgc**CG**aga a**CGG**ag**CG**a</mark> င**်ဥ**င်ငင်**ဥ**င် ctctgaggaa ctgcttCGtc gtgctttgaa ggagactt**CG** atacacca**CG** taaqaactgt cacagagaag attcagtgaa ccttgtgttc tggtttcact catcctgatt aga**CG**gcctt ccttctcagt agtagataag acccaqcaaq cagtgctaaa acctctcatt ggtcagtcag **CG**gaaggct gtgacagaag tagtaggaag tgagctgttc agaggcagga gggtctattc tttgccaaag gggatctttc tgggaaccc ggtaggatcC GgaaCGcatt attgaaacac agagcaccag tgtacaaacc gtcac<mark>CG</mark>aga cctgtgaggg tgga<mark>CG</mark>atct tctgggacaa aaCGtctgcc cctgcctgga Gactccagaa gacaggaaca agaaaaagaa agctgggtaa tgactttctc ctctgactga cagaaacagg gaaaaaga<mark>CG</mark> aacCGacaaa gatcaatgcc tcCGtagcat cccaagttc aaaacagtgg cccctCGag ggggtcag**c**G caatactgtC atttacactt tcactctgcc gacctgggcc acagctgagt gagtttgcta ctgaaggcCG ggatttggtc atggatgaca atcacagatc caagacacca gaccttgagg gaacccttga atttatatca gaaattcctg agctcagtgg gcacCGtCGg ggaaaatgca gaagaatatc aggagaactt tccacttcct gcctttggaa gaatCGatgc tgtcaggaat ctatgaaatg aactttccct agac**CG**ccag agcactaaaa cttaatgaaa gtaccactat agtc<u>CG</u>actg taagatCGtg aattaccctg taccccagaa gcacaatgct cttgaaaatg tgaaggacat catctcaccc tttacttgga gcccccatc gtttgtctgg Gagcaagcct gaagtattca ccaaagaatc t**CG**cagacca aatcatcagg ctcaccagga aagtcaccag gcacagagag ctgaccatCG agtgcattat gcaccaggta ttccaaagat ggtgcagagC Gtgtaattac caagaaatgc tggagaattc Gaactcagat acctttgcca accagctcct taatctgtgg cattgctgga acagcagagc acagtcctag tgcaataaga tcCGagcagg ttgcaagca tggattggcC ctCGtcccaa tgccaggaca gttattaata ttttcCGca gtgggaatgt atcCGaaaag ctggccacca ggcttgacca gccatctgct ctacaagaac cctcacatgt aagcaagaat aattccagtg acctaaatC cttagaattt tcaccactCG 241 301 361 481 541 601 421 661 781 841 721 901 1201 961 1021 1081 1141 261



### Unmethylated 163BP

ggattgg gatgtTGaga aTGT FUM 21 BP AT 60 (SEQ ID NO:92)
c Aaccaatcca acCAaaaCAa RUM 21 BP AT 60 (SEQ ID NO:93)
Methylated 142 BP
ga aCGCGagCGa ttCGagt FM (2) 19 BP AT 60
Gaccaatcca acCGaaaCG RM (2) 19 BP AT 58

FIG. 3B



ACCESSION

cds

(nes1) mRNA, complete

Homo sapiens serine protease-like protease

AF024605 (SEQ ID NO:94)

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ccttcctatc cgcctctggc cgcagaggcg cccgtgcgcg gccactgtgg aaggcgaacg gcccgcgtc ggttgctggc ctccagcatc caacaacatg tggctctgcc ccggacgact aggccccctg taaagtcata cctgctgatc gaagtggtgg cgtgcctacc agagcagtta gggcaagcca tcatgtgatt actctcccct tgttgtcgtg cctctcacct ctgcgcggg aactctgggc teceetecet acctctccgc cctatggcgc tctcqttcca gcggaaacaa ccatcctgcc tagtgccggg accagtgcca agcagctccg gcgtggtcac gtgactctgg ttacccctg agtcggctga aaacatctcc ccagcctctg gcctgacctg cctggatcaa atgttatgct tgaaatgcag ggaacaatga aaaggttacc gtgtgacttt atgtaaatct cacgtctggg ctgatggcgc ttcaacggcc ccgcacctcc gaccccgaag cttcagggcg ggctcaggcc cagcccggag gccgcgcact gccaggcccg tacaacaagg ttctaccctg ccttgccaga tcgtggggtg aaatacatgt gctgatccag cttcctcccc gtactgaage cggtcatcac actccccgct ccacacctct agttctgact ctgcaaaatg taacatgtgt agggcagagg ggtctcgctc aggcatcctc gctgccgctg cacgcgcttg gtgtgaggtc gggccaggac ttcctctgcc catgagagct ggtgctgacg cctgctgctt gtaccaccag gctaaagctg gagagtgaag ccagatctgc ctacgctcca gactatgata ccgctgtgct cgtccatcct ctgccgccct ttctctgcct gccaggaagc gtttcctcat gtgggtggtg gaccacaggc agatcctggc cccaaaacga agccctggca gggatgatca tggcgaagct accagagttg tccatcccaa ctgtctacac ccaacctgac gttgtgagga atctcatgtt agcttcccta cagccaccca gccctaaaga gactggaccg agaccctcca gatccagatg cctatcccca gaggctccat ttccagagaa ctgaacctca gcttaacaca gttcaaacct accagcggca ggcgactccc gcccgggctc gcgctgctcc cgcggctcgc gtcctggtgg cgggccctgc gctcgagtag gatgagcacg tggggcacca actatcctga caaaggttta cgctctgttg atatgtgctg gtctgtgacg cagcatccag cgctccaact cagatgccca tgtctgcact cattccccca ctggggtcac gtcatgtaag agtgccctct tcttagacat aaaaaaaa 121 241 301 481 541 601 721 361 421 781 841 901 661 141 201 961 081



nts +169 to +349 Sequence analyzed: Exon 3 sequence

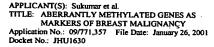
GCGCGgctCG cagccctggc aggtctCGct cttcaaCGgc ctctCGttcc actgCGCGgg tgtcctggtg gaccagagtt gggtgctgaC GgcCGCac TGCGgaaaca a gcctatggCG cccCgtgCGC cccagaggc cgcctgctc cccaaaacc acacccct ggacccccaa (SEQ ID NO:95)

Unmethylated 128 BP

(SEQ ID NO:77) Nesl FUM 20 BP AT 56 trgtagaggr Ggrgttgttt (SEQ ID NO:78) 26 AT ВР 22 Nes1 RUM acch CACAcaat aaaaCAaaaa

BP 137 Methylated (SEQ ID NO:79) 26 BP AT **5**0 1 FM Nes ctCGaa gtttatggCG tttC

(SEQ ID NO: 80) Nesl RM 20 BP AT 58 t tatttccGca atacccGAC





(SEQ ID NO:96)

AC004080

HOX A5 Promoter 3' to 5'

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c**ccc**tcccc gcttg**CG**cat g<mark>CG</mark>cact<u>CG</u>c 2<u>92</u>66<u>92</u>6<u>92</u> accatatat ttagggagtt agggcag**CG**g ggc<mark>CG</mark>gagcc **CG**gagtgcat tatgcaactg agctcatttg tagcaccctt ctcctaCGta t**cc**taaatcc ggagg**CG**agg cagc**CG**gact gctgcaaggg cct**CG**cagtt g**CG**aggatgc cttatgtgca ctggagttgc a**CG**g**CG**gagc ggacCGagag GgctCGctct GgctcCGgaC GcCGtgccaa tacctgggct gagccaaagt cCGtacctgc acttggttcc tgcCGcCGtt tctccataat tgtgCGtcta tgttgtccag ggagttgggt attgcatttc acaaaataag cccacccgddd 9200909090 CGaggCGcCG tttaccatga CGCCGggctC **CG**agggggcc aagagaggg **CG**gctggctg Ggaactatga GCGctctcCG gtagc<u>CG</u>tag aaatgagttt CGCGgtCGtt tgggacatgt cacctgcttt cactaatagg CGCCGccagt tggcaaaatt CGcccagctt agctgc**cG**at aaaggctggc CGtcctcctC CGgCGtCGgc ggCGgcagag CGctgcCGgg tggaCGtggc agctgCGggC gctCGctcaC tggaaatgac ccatgccatt ag CGac CGca atttgtggct GacttCGaat taaactCGtg ggCGCGtgcc cagcccatta ttaggc<mark>CG</mark>tc cagggctcat actgggagag ggatttagaa atctggggtt ggagagtgCG ctggcagggg tgggtgctgc tggtggctgt ccatttggat tgatgaatta tatggggta<mark>c</mark> **50**000**50505** attgaggtta gtaccaattg a**CG**ctgagat tgtgtgcttg ctggcag**c**Gt tccctgaatt cctctagagg cCGctggagg ttcccGccG at**CG**ggctga tttttgata gcacaattta accaagagag gcegtcecet ccaggggtag ctgctCGctg gctgctgatg CGCGCtddCG CGagCGgcCG ggcacccaaa **Gag<u>CG</u>ccac** gct**CG**cCGag gtagtc<mark>CG</mark>gg gcctgatga ggggtgg**cc**c c**CG**gggt**CG**a ccattaggat agaggattgg 6321 6381 6501 16561 .6621 .6681 16441 6741 6921 17041 6801 6861 6981 7101 7161 17221 17281 17341 7461 7401

# FIG. 5A



Complement- 5' to 3' (SEQ ID NO:97) Promoter region analyzed: nts -97 to nts -303 agcccaggta cagccagc**c**G aa**CG**g**CG**gca atcctaatgg cccttgcagc cctattagtg cagttgcata attatggaga tcatagttc<mark>C G</mark>tgat<mark>CG</mark>agc aattcaggga ct**CGgCG**agc atgcactc**CG** actttggtct att**CG**aagt taattcatca atccaaatgg cc**CG**gactac caattggtac t**CG**accc**CG**g agtcCGgctg ggctcCGgcc CGggggCGCGC GCGccaccc. cctCGcctcc acccaactcc taaattgtgc aagggtgcta taga**CG**caca aa**CG**ac**CGCG** agccacaaat caagcacaca cctctagagg tcatcaggcaggatttaCGa ctggacaaca aaagcaCGtg Gtaccccata tttgggtgcctaCGtaggag ggaaccaagt acatgtcca gtcatttcca CGgcCGctCG ga**CG**gcctaa atgagccctg cctccagccg gtggcctcg taacctcaat **9**20**92**00**92**6 tatcaaaaaacaaatgagct cttattttgt aaadtcattt tgCGgtCGct at CG g cag ct CGccagCGCG aattttgcca taatgggctg gcaggta<u>CG</u>g cta<u>CG</u>gctac aatggcatgg atctcag<u>CG</u>t ອວອວອວຣີອວ CGgagagCGC GccCGcagct aCGctgccag gccaCtcca CGcactctcc tcagccCGat ggca<mark>CGCG</mark>cc ccaatcctct gcatcctCGc cccccggtCGg aagctgggCG gaaatgcaat actgg**CG**g**CG** aactg**CG**agg ca**CG**agttta

### FIG. 5B



APPLICANT(S): Sukumar et al.

TITLE: ABERRANTLY METHYLATED GENES AS
MARKERS OF BREAST MALIGNANCY
Application No.: 09771,357 File Date: January 26, 2001
Docket No.: JHU1630

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UnMethylated 213 BP

tregtreg aagttgggreg rom 18 BP AT 56

gta<u>rG</u>tg att<u>rG</u>aagt<u>r G</u>tatt

aataC AacttCAaat caCAtac

RUM 22 BP AT

Methylated 183 BP

tttagcgg tggCGttcg FM

18 BP AT

taCGatg attCGaagtC Gtat

ataC GacttCGaat caCGta RM 20 BP AT

26

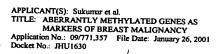
FIG. 5C



Sequencing 307 BP

attttgtta taatgggttg taat	Hox A5 Seq. F 23 BP AT 56 (SEQ ID NO:73)
ggag ggaattaagt atatgtt	(SEQ ID NO:100)
aacatat acttaattcc ctcc	HOX A5 Seq.R 21 BP AT 56 (SEQ ID NO:74)
Expression 248 BP	
tcattt tgcggtcgct atcc	HOX EXP F 20 BP AT 60 (SEQ ID NO:75)
ccaggta cagccagccg gc	(SEQ ID NO:101)
ge eggetggetg tacetg Ho	HOX EXP R 18 BP AT 62 (SEQ ID NO:76)

## FIG. 5D





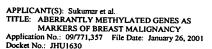
Homo sapiens 14-3-3 sigma protein promoter and gene, complete cds.

ACCESSION No. AF029081 (SEQ ID NO: 102)

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caattttata gtgggttatg acattactgt gtttattcca tatggacttc gttcatgtgt ccatcccctt tcacgagaaa cagcccccag gggtggggtg gctctgaata cctccatcca ctgagtctgg tcaaaataga gggctcccac gaaagtgaca gacagctggg cagtttataa agggccctgg cccaactggg gaaggcaggc ctggaggaag gagacagtag accagggccc cctgtcccct ggacacctgt cttcttccct cccggcatgg gtattttgca aatgtcagcc gttttaataa gccccctgcc ttccttcttc gtgtgtgtgt cgtgcactgg ccctacccac cctcctctga ccaaacggga gaaggttggc tagtttctta tgggcgtggt cccagcctc tgaagccttg agtggtcaca ttgctgaggc gagactgtga caacctgggc ctagaggagg aataaaactt tccctcagga gctctgtccg aagaggccat acccaaatt gaaaatgttt caagccaggt ggaaggagaa ttaatgctgg aggctggttg aggctgagcc gtgtgtgcat ccctgggct acagggggca cctcctatct ctaccccag agccacaccc ggtgtttctg ctgggagctg tcaagtgggc cctggctgga ggcacgtgaa ctaccacctc tggcccacct ctctggtatc agaggcaagt tccagaggct aacagcttca gcccagctaa aagaagctgg tcctgcttgt tgcttttcct cttcctggg gggcttggag aacgggttta acttctctcc tttttaaat ggttatcaga ctcagcccag ctgcccagac tggaagacaa gagtgagagt gctcccagat agccaagggg ccatcctaca ctctgccact gggtgggcca ttctcctctg ccttctcac ccttggccct cctctggaga ggaggtgagg tattctttgt ggtttttgtt aaatttggtt ttttccctca agccccatg cctgcctcag cccaatgagt gcttccctgg ctgcccctcc caatacttga ctacatagtc cagctgggac ccaggtgaag tggctggaat aatgtggctg aagcactctg cccactgggg tgtctgggga tgccaggagc ggagcggctg agaaggtgca cagaggatgt ccatcccct ccagatcttg acagagggtc tttaagccag tcttcagac tctggctaca gctgcggctg cactccgatc agtggccctg gctttggttt tccaccttcc gagagccgga ctcataacac ggatcccagc ctcatgctgg ctgtgtagtg agagaccttc gccctgtatg gacctcttt tgagtatcag acctgggct agacagccag gtgaggcttc gagaaaagga gccggaaact taggaagtcc aatggcagcc atggctctgg tgggacccag tattgttcca gcatcactgc actgcctttc ctacctttta agcccagtga agcagagagg ctttqtcccc gagttgcttt agccctctgt agccagacaa attccagttt 181 301 421 541 601 661 481 721 781 841 901 961 1081 1021 1141 1201 261 1321 381 1441 1501

# FIG. 6A



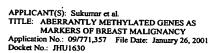


(SEQ ID NO:102 (Con't)

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# FIG. 6B



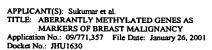


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**FIG.** 6C



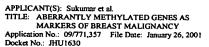


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## FIG. 6D



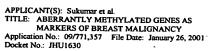


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## FIG. 6E



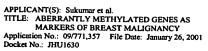


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## FIG. 6F





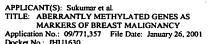
H.sapiens Wilms tumor (WT1) gene promoter.

ACCESSION No. X74840

(SEQ ID NO:103)

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# FIG. 7A

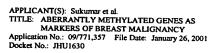


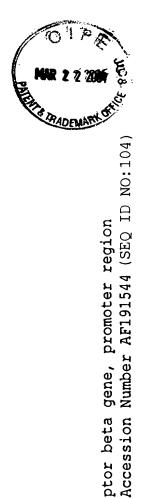


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(SEQ ID NO:103 Con't)

### FIG. 7B





Estrogen Receptor (ER): Homo sapiens estrogen receptor beta gene, promoter region

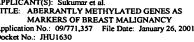
cds

and partial

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**CG**gtttccat **CGCG**atcttg ctcctgagta agtagaga**CG** cacctgcctc tttcttcacc gaagctgatt gcatgttgtc ctgcctcaag tactgtaaaa gcatatgggg taatgaaaat tgaagcagat tcaacccaga acaaccetca gcacagatgt ttcattttca ccctggggct ctgccaccag **CG**gagaaggg aggaagtacc aatcagacat aagtgtggtc catctgtgCG tgagaaccca **G**ttgctgct atagatgcat tccttcatga ctgcctcagc cctCGtgatc aagctgattt aatgcagtgg gtttagctga ttgtatttt gcctggccat aggaggaaga gctgagattg actaacttct ctctcagctt ctcatcttta ctgaggctgg gatctggatc gattaattag tagtctCGca ggaactgggg agtgagtt**cG** tcttgagggc tactttcctt gtgcctccag cCGaggttaC ggctccttag GtgatcctCG ggttggaaat CGggggagCGc gctggtattg tggttgaaat ccaccaaatg cccaggctgg ag CG attctc aaactcctga ttcCGtccaa gaaaccagga cagccaattt gagccaccat taaggtggca agacagggag acctgtggac cacagctatt caccaaacag ctctattaga atggtttgat ggtcacatgc actgtggtcc actccagggc ggctgaggaC cccaggacct ttaagctggg tgccacttca cccagtgacc gggtgggcag tttcaccact taaatctgag actggggctg tttttctgcc tgttggctta aCGCGtggtC GaCGgccCGg caagtatata CGctctgtCG cccatgttca ccacCGCGtc ggctggtctc attttctcca caacctgaga tttggctaaa ttataggtgt Gacacactct cctCGtcttc acctgagtag ccaggacagg ggagacttt atggcctgtg gaacaccca tgtcttcatt gccagttaag cCGagaagag CGgctttgcc gcctctctgg gtgagtcagg gt**cG**gcatcc gtctccc**CG**g Gaaaggcctt atcttgttaa atcatttaac ttgagagacc cccttatgcc gacagagtct acctcCGcct agtgctgaga atttgccag**C** aaatgcccc ctgccttaaa ctggcatgtg atgttggtca ctctgccttt gtggggcagt ctttggagcc **G**tctctctat gggtctcaca ctctagtcca tgggtgaggg gggcctt**CG**c Ggaggcacag gatctaaCGC caaacccaaa tgacacttat ctgtatcagt ccagacctct actatagggc ctcacctatc ggcctcccaa gacagggaga gcacacttgC ttccagagat tttttttga gctcactgca gctgggatta aggtttcacc tttttaaacc actgggtact tgctgcagtt tggacttagg gcttctccat cttccctcc aaaccatgt gacactgggg tcagcaacag cctgctgggg CGCCGtggcC ctgttctgaa ggggCCCGag tgggatctt ctcctccac ggggatttga cccagactgg aggccctact 241 301 361 421 481 541 601 661 721 781 841 961 1081 901 141 021 201 261 321 441 501 381

# FIG. 8A





agaggtca**CG** 

gctcccactt

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ccactatcct tgtgggtgga ccaggagtCG

ggCGttcctg agacCGtCG

CGCGGCGtCG

1801 1861 1921 1981 2041 2101

actactcccc tctaccctcc tctCGgtctt

tCGgtcaCGt

tccttaagtc ccccCGccag tgcaggg**CG**a ggctctggggg

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gacacccact

tggctttttg

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tcagctgtta ctcctacaac

attctccttc acataccttc

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ccccctaat

cCGgagcctg

ggc<mark>CG</mark>gggag

gCGagCGctg

agagcagg**CG** 

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gaattacagc

ttctatagcc ctgctgtgat

agccatgaca

gggcc

cttggaaggt

ctcctatgta

agctgcagga ggtgCGctCG ctttcctcaa

ggaccacccc agctgCGaCG

aataactgcc tcttgaaact

ggctgCGaga

gaggcagttg caag<mark>CGCG</mark>ga

Gcttgtgatc ttttcagttt

ctccagctgc

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# FIG. 8B

ID NO:85) (SEO 9 BP AT 21 FGM G ggrettttg agatretreg

288 BP

Unmethylated

(SEQ ID NO:86) <u>TG</u> agttg<u>TG</u>a<u>TG</u> ggttttgg

ID NO:87 (SEO 58 AT 20 BP RUM ccaaaacc CAtCAcaact CA

BP Methylated 181 (SEQ ID NO:88) (SEQ ID NO:89) 9 BP AT 18 E u CGggaaaag taCGtgttCG agagtagg**c**G g**c**Gag**c**Gt

RM 20 BP AT 60 CGaacaCGta cttttccCG FIG. 80

(SEQ ID NO:90)